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ORIGINAL COMMUNICATIONS.

EXCISION OF THE OS CALCIS AND PART OF THE ASTRAGALUS FOR CARIES.

RECOVERY WITH A PERFECTLY SOUND AND USEFUL FOOT.

By A. J. BAXTER, M. D., of Chicago, Ill.

The very important part which the foot performs in the human economy; its exposed position, and consequent liability to injury, have obtained for it a large share of surgical attention.

The practicability of conservative surgery of the foot appears to have been first demonstrated by Garengeot, and subsequently dilated upon by Heister—but the credit of the first operation was reserved for Du Viviers, in 1783.

Since which, so numerous and ingenious have been the attempts to save as much as possible of this important member, that nearly every bone, from the metatarso-phalangeal articulation to the ankle-joint, has its peculiar operation and

champion. Yet in spite of all that has been said in favor of this or that operation, they are not all "surgical fixtures" by any means—as our medical journals and the hotly contested debates of medical societies will bear witness. When doctors disagree, who is to decide? If I may be allowed to answer this question, I would say "Statistics." As the real merits of surgical operations are only obtained by comparing the result of a large number of instances in which they have been performed, it is obviously the duty of every surgeon to place upon record a clear and truthful account of all cases that fall within his observation, that each one may contribute his mite to the mass of experience from which alone correct and final results can be deduced.

Case.—In the early part of January, I was requested by Dr. Payne to see Wm. C———, aged 7 years, who he said had caries of the bones of the right foot, and he feared the ankle-joint was involved also.

At my request, the Doctor has furnished me with the following history of the case:

"When I saw Wm. C——— first, (November 13th, 1864), he had been confined to his bed eight days with what was supposed to be acute rheumatism—but in reality was erysipelas. The scrofulous diathesis was well marked—his father having died of consumption. He was very much emaciated—tongue dry and coated with a heavy brown fur throughout—pulse 140, small and weak—surface hot and dry, with considerable tympanitis, subsultus tendinum, &c., all together presenting rather an unfavorable aspect.

The erysipelas developed itself simultaneously on both superior and inferior extremities—though more marked on the right side. On the right inferior extremity it commenced at the tip of the great toe, and extended four inches above the knee, completely surrounding the limb, with much swelling up to the inguinal region, including the inguinal glands, which were very tender on pressure. On the left extremity it commenced upon the dorsum of the foot, and extended

three or four inches above the ankle-joint. The superior extremities were involved about a like covering about five inches over and around each elbow-joint.

Under the liberal use of tincture of iron, quinine, milk-punch and beef-tea he gradually improved, and by the first of December he was able to sit up—the erysipelas had entirely disappeared, but there remained considerable swelling about the right ankle.

December 2d.—Very much improved generally—though the foot and ankle remain somewhat swollen and tender. Ordered all treatment suspended save the iron and poultice to foot, and discontinued my visits.

December 17th.—Was called again, and found that two abscesses had formed. One on the right side external to the nipple—the other below the internal malleolus of the right foot; opened them, the former discharged a large quantity of pus—the latter very little. After a careful examination of the foot with a probe, came to the conclusion that the abscess was confined to the cellular tissue—as no opening could be found to the bone, ordered dressing of bread and milk poultice to foot, and Syr. Ferri Iod. gtt ter die. At the end of ten days the abscess in the side had entirely healed, the one in the foot appeared nearly so. Again discontinued my visits.

February 25th.—The mother called upon me and exhibited four small pieces of bone which she said had escaped from openings in the foot. Requested Dr. Baxter to see the case with me."

CONDITION AT TIME OF OPERATION.

General health good—says he would be "perfectly well were it not for the foot." The foot and ankle are considerably swollen and club shaped—skin tense glazed and semielastic. There are three sinuses [one in front of the external malleolus—one between it and the heel—the other below the internal malleolus,] from which there is a good deal of sanio-purulent discharge. A probe introduced through any of the openings led to the astragalus and os calcis, which were

softened and carious. Owing to the swelling, it was a matter of uncertainty how far either of the bones were involved—but it was thought that the disease was confined principally to the os calcis and the under surface of the Astragalus, which was substantially correct, only both bones were much more carious than was supposed. After informing the mother of the nature of the disease—and that a small incision in the foot would be necessary—she readily consented.

The patient being chloroformed, by Dr. Payne, the operation was commenced by making an incision from the superior external fistulous opening (*See Fig.* 1.)

FIG. 1.—Appearance of the Foot before the Operation. A lines of incision.

downwards and forwards to midway between the calcaneo—cuboid articulation and the base of the metatarsal bone of the little toe—thence backwards to within half an inch of the tuberosity of the os calcis and finally upwards along the anterior border of the tendo achillis to the extent of an inch and a quarter.

After raising this flap or curtain as it were and looking in, such an amount of disease was discovered—especially in the astragalus—that it was thought it would be necessary to convert the operation into one of amputation of the leg. But to determine this matter it was decided to turn out the diseased

bones, and see how things would look. Accordingly a small chisel was entered at the calcaneo-cuboid articulation, and the os calcis being very friable was literally "scooped" out. This brought the under surface of the astragalus into full view—and after gouging out the interior of the bone it was found that the entire disease could be removed without opening the articulation—though the crust left was so thin that it caused me great fear for the result of the operation. The tourniquet being loosed, no hemorrhage ensued, the wound was stuffed with lint, a compress and bandage applied, the patient removed to bed and half a grain of opium given. On examining the os calcis, some parts of it seemed to have undergone what Mr. Gant describes as "fatty disintegration," with free oil globules floating about. From this time forward there never was the slighest pain in the foot, or difficulty of any kind.

About two weeks after the operation, his mother took him into the country to visit some relations where he remained about two months. On his return to the city, the wound had entirely healed, and as there was no tenderness, he was running about the str'ts with the aid of a cane. He has frequently been forbidden using the foot so extensively—but as its use is unattended with pain, the injunction goes unheeded. The only sign of the operation having been performed, is a slightly depressed cicatrix [*see Fig. 2 A*] on the outside of the foot, with a slight inclination of the foot outwards—the result of his persevering use of the

FIG. 2.—Present appearance of the foot. A Cicatrix.

foot at too early a period. The shortening or flattening of the heel is so trivial that I do not think it will ultimately exceed a quarter of an inch.

CLINICAL LECTURES ON DISEASES OF THE EYE.

By E. L. HOLMES, M. D., of Chicago,
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DISEASES OF THE RETINA AND OPTIC NERVE.

GENTLEMEN:

Referring you to standard works on anatomy for a description of the optic nerve posterior to the globe, I will simply call your attention to that portion of it which will be of most importance in your investigations of diseases involving the nervous apparatus of the eye. This portion is the papill of the optic nerve. After the nerve has passed through the sclerotic and choroid, as described in a recent lecture, it becomes a thin membrane spread over the concave surface of the choroid. The end, as it were, of the nerve, however, can be seen as a well-defined disk, in many cases slightly elevated above the surrounding nervous tissue. This disk is scarcely larger than the head of a pin, yet, when examined with the aid of the ophthalmoscope, it appears much larger.

The retina is a thin transparent membrane, varying in thickness from 1-20 to 1-10 of a line, and may be divided into seven distinct layers. The middle layer is composed of the nervous fibres of the optic nerve, radiating in all directions towards the anterior portion of the eye. The other layers are composed of granules, ganglionic cells, and so-called bacilli and coni. These various elements, as also the separate fibers of the optic nerve, are united by an exceedingly deli-

cate areola tissue, which plays an important part in inflammation.

The vessels of the retina, consisting of branches of the central artery and vein of the optic nerve, branch upwards and downwards, as you can see by close inspection of this preparation of the posterior hemisphere of the globe, and are represented with the papilla in this beautiful diagram of Jaeger.

A line and a half to the temporal side of the optic papilla, at a point corresponding to the posterior end of a line carried through the centre of the cornea and of the globe itself, to the retina, is the macula lutea, the point of most distinct vision.

The retina is held very loosely in connection with the choroid, except at its anterior edge, where it loses its nervous structure and becomes a delicate, transparent, yet quite strong membrane, firmly attached to the ciliary processes. It here divides into two lamellæ, one of which is united to the anterior and the other to the posterior surface of the capsule of the crystalline lens, near its periphery, and is called the zonula of Zinn.

The discussion of the functions of the retina is one of the most interesting subjects in physiology, but would alone require several lectures. I must therefore refer to the chapters on vision in the best works on physiology.

There is a peculiar change in the retina of aged persons, which, like the turning gray of the hair, can scarcely be called a disease, and which yet causes to a certain extent the dimness of vision observed in advanced life. This consists in the deposit among the intranervous areola tissue of greyish colored granules and also of minute glass-like particles, both of which in some cases can be seen by means of the ophthalmoscope in the mottled appearance of the retina.

The diseases of the retina most common, and therefore most important for your consideration, are the different phases of inflammation. The three cases before you to-day

are examples of retinitis in different forms, one from Bright's disease, another from syphilis, and the other obscure in its origin. The precise manner in which the inflammatory process goes on is not understood. It is, however, well established that the areola tissue which holds the different elements of the retina and optic nerve together is first implicated. The cells of this tissue enlarge, new cells are formed, and a yellowish exudation takes place. The final results of these changes depend upon their duration and violence and extent of surface implicated. The layers of the retina nearest the choroid seem most liable to inflammation. Some time may elapse before the vessels of the retina which are in the layers nearer the vitreous humor become covered with exudation to such an extent that they are rendered invisible in an ophthalmoscopic examination. The inflammation may be uniform over the whole retina and papilla of the optic nerve, or it may be circumscribed within very narrow limits. Retinitis is often associated, either as a cause or effect, with choroiditis. The exudation is often mingled with a large number of pigment cells, which can be seen with the ophthalmoscope as irregular brown or black patches, and are frequently found in and around the papilla and around circumscribed portions of the retina affected with inflammation.

Not unfrequently minute points of extravated blood will be observed in the retina. One of the most common abnormal appearances is caused by the presence of minute radiating lines, extending from the centre of the papilla to the ora serrata, obliterating the line of demarcation between the retina and papilla.

The effects of inflammation upon the structure of the retina are various. The disease may be of short duration, terminating in the return of perfect vision. In other cases, it may cause atrophy of the nervous tissue; or it may cover the nervous fibres, with an organizable lymph, which may never be absorbed, and yet, upon the removal of the eye, the substance of the retina within this lymph, may be found to retain its

microscopic appearances intact. The inflammation often produces atrophy of the papilla, and a softening of the lamina cribrosa of the sclerotic, in consequence of which changes, this portion of the globe cannot withstand, even the normal pressure of the nitra ocular fluids, and cupping of the papilla is the result.

Inflammation of the optic nerve may lead, as in that of the retina to atrophy from disarranged nutrition. As in other organs of the body, inflammation of the retina and optic nerve may lead to falty generation.

As the result of retinitis, much oftener as a result of choroiditis, sometimes suddenly and without any known cause the retina may become detached from the choroid, either in small circumscribed portions or over its whole extent.

The causes of retinitis are often very obscure. Injuries, imprudent use of the eyes, syphilis, scrofula and certain affections of the heart, lungs and kidneys, especially Bright's disease, excessive lactation are each sufficient in different cases to induce inflammation of the nervous structure of the eye.

The course of this class of diseases is usually slow, and subacute in character. Acute inflammation, resulting in suppuration is not common. Under suitable treatment, the disease may recover, but it often resists the effects of all known therapeutic agents.

The principal symptom of inflammation of the retina and optic nerve is dimness of vision without any appearance of opacity of the refracting media. If a portion of the retina or a few fibres only of the optic nerve are affected, there will be a dark spot constantly in the field of vision, in the part corresponding to the affected portion. This last symptom is often indicative of detachment of the retina from the choroid. There is generally little pain in uncomplicated inflammation of the retina and optic nerve. The patient is more liable to complain of unpleasant flashes of different colored light. The iris is usualy normal in appearance, and the pupil movable, although more sluggish than in health. Congestion of the conjunctiva and submucous membrane is seldom observed.

The only means of detecting the objective symptoms is by means of the ophthalmoscope. From my previous remarks and from examining at the plates of Jaeger and Liebreich, you already know what these symptoms are. Some of you have had opportunities of observing with ophthalmoscope extravasated blood, detached portions of the retina floating in the vitreous humor, abnormal conditions of the vessels, the presence of pigment, and yellow exudation and the changes peculiar to the papilla of the optic nerve.

The leading principles upon which you must base your treatment are comparatively few.

The eyes should be kept in perfect darkness for ten or twelve days, rather by means of a light, yet efficient bandage, than by confining the patient in a dark room. The eyes should be uncovered once daily in a dark room, for the purpose of bathing.

Local bleeding by means of the artificial leech has been used with great advantage in some cases.

The use of Bichloride for mercury, Iodide of Potash, Permanganate of Potash, Bromide of Ammonium, may be tried according to circumstances.

Strict attention should be directed to the condition of all the organs of the body, and appropriate remedies applied in case of their unhealthy action.

Retinitis dependent upon syphilis, even when the vessels and papilla are to a great extent concealed from view, may sometimes be wholly removed by specific remedies and vision restored.

Even when existing as a complication of Bright's disease, with serious amaurotic symptoms, vision may be much improved temporarily by means, which modify the condition of the kidneys.

It should be remembered that treatment is most frequently followed by favorable results, when commenced in the earlier stages of the disease. If of long duration, the disease must be considered as very grave.

A CASE OF COMPOUND COMMINUTED FRACTURE OF THE HUMERUS, AND SIMPLE FRACTURE OF THE TIBIA AND FIBULA—RIGHT ARM AND LEG.

By E. J. NUGENT, M. D., of Homer, Ill.

On Saturday, 3d of December, 1864, I was sent for in great haste to go to Mr. John Insley's, five miles south-west of this place. On my arrival at the place, I found his son, a boy of about ten years of age, lying upon the bed, very badly bruised and wounded. Upon inquiry in regard to the facts, I learned that they were engaged in threshing, it being a very cold windy day, his son having on a rather long overcoat, was standing not far from the tumbling rod of the machine, and the wind blowing, his coat was caught by the rod and he drawn by the force of its revolutions until he was carried, as they could best judge, some twelve or fifteen times in its revolutions around, when one of the men, seeing his condition, caught the rod, and as fortune would have it, one of the rivets being loose, it was readily displaced and probably the boy's life saved, before the horse-power could be stopped. The boy was carried to the house almost insensible.

I proceeded to adjust and place in position the fractured tibia and fibula by means of bandage, pasteboard splinters, roller, etc., and placed the whole in a neat fracture-box, made especially for the occasion.

There was a wound of the right *arm*, commencing about the inner portion of the coraco-brachialis, involving the integuments and superficial fascia and extending laterly and posteriorly through all of the muscles and soft parts of the arm, ranging posteriorly about midway between the spine of the scapula and his doral vertebra—deep down through the tropezius, and the lower portion of the arm was twisted

around, but no wound of the brachial artery or its sheath. The fracture was at about the surgical neck of the humerus, and but slight hemorrage, the fractured ends of the bone protruded and pierced through the shirt, exhibiting the nature of the fracture.

After stating to his father the serious nature of his wounds, I requested consultation. He would not listen to resection or amputation, but was exceedingly anxious to save the arm.

A messenger was immediately sent for my venerable friend, Dr. Somers, of Urbana, who did not arrive until four o'clock A. M., Sabbath morning. Dr. W. A. Conkey, of our place, also accompanied me in the morning.

10, A. M.—Pulse 80. Dr. W. A. Conkey then proceeded to administer chloroform. About one hour was spent in striving to place him under its influence, but all to no effect. Dr. Somers purchased the chloroform, said it was fresh and good as usual, of common strength. We then proceeded without it. I applied some 10 or 15 interrupted sutures and adhesive plasters, in strips, and brought the wound nicely, and close in opposition, and then produced extension and applied roller and four well padded splinters, and secured the whole by bandages, and placed a wedge-shaped pad in the axilla, and extended the arm and placed it upon a pillow. The little fellow endured his suffering like a man, and rested from the effects of morphia very well afterwards. Left him six powders of sulph. morphia, ½ gr. each, to produce rest and allay pain, and ordered Epsom salts ℥ i. in the morning.

Dec. 5.—Found my little patient had rested tolerably well last night, and the dose of salts being repeated without effect, an enema was administered, which produced rather a copious discharge; pulse 110; tongue coated light-yellowish, some appetite, had eaten some and drank milk; parts swelled considerable.

Dec. 6.—This morning the patient feels very well, having

rested last night, had one operation from the bowels, appetite moderate, pulse 100.

Dec. 7.—To-day applied new bandages, and dressed the arm, wound is suppurating very nice, and looks well; took away some of the sutures and applied adhesive strips anew.

Dec. 8.—Visited him again to-day; he feels very comfortable; bowels regular; pulse 95; tongue clearing off from tip and edges; wound suppurating profusely.

Dec. 9.—Doing very well; rested well last night; appetite improving; ordered light farinaceous diet; milk for drink; dressed the wound; applied new adhesive strips; is suppurating a great deal, and but little tumefaction of the parts.

Dec. 12.—Visit him now every other day; dressed the wound; removed all the sutures; applied new adhesive strips and bandages; wound suppurating very much, and was compelled to change bandages, and pad the splints anew, and changed the bed-clothing, to keep from producing offensive smell.

Dec. 14.—Dressed the wound to day; suppurating nicely; parts look well; bowels regular; appetite good; rests well; tongue almost clean.

Dec. 16.—Dressed wound to-day; doing well and improving fast.

Dec. 18.—Dressed wound; applied all new dressings; wound commencing to unite; parts healthy.

Dec. 20.—Again I visited my little patient and dressed his wounds—all look healthy—suppurating and healing as fast as possible.

And without lengthening the report by naming every visit, I will conclude by adding that I continued to visit and dress the wound every second or third day, up to about the latter part of January, when I was able to place the limb in pasteboard splints and he could use the arm some, it having united firm and solid to all appearance. The external wound healed very nicely, but leaving, as it could not be prevented, a large cicatrix. The placing of this arm in splints was

a great risk, but the father consented and urged us to do so as he would stand for all damages that would occur; and contrary to the expectations of us all, he will have good use of the arm and leg, and a novelty in the line of surgery of the complete union of a compound comminuted fracture; but everything seemed in his favor—cold weather, a healthy, vigorous constitution, and good care and attention, and everything that would conduce to his comfort.

I send you this case, hoping that it may be of some advantage to those who may read it, as it has been to me. Drs. Somers and Conkey have my acknowledgments for their aid and assistance in this case.

The patient can now use his arm about as well as the one not broken, in extension and raising and throwing stones with it, etc.

SELECTED.

DISCUSSION IN THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY, ON THE HYPODERMIC ADMINISTRATION OF CERTAIN MEDICINES.

Charles Hunter, Esq., brought forward the results of his investigations into the effects of medicines when subcutaneously injected. It is now six years since Mr. Hunter proposed the injection of Medicines into the cellular tissue with their general therapeutic object in view. In the case of medicines thus injected for general affects, he called the method the "hypodermic," to distinguish it from the endermic, and from the local injection of Wood. From the endermic method, which term is often and erroneously applied to the hydermic, it differs much; the endermic is a superficial application, which must be uncertain in its action, which may act

powerfully and dangerously, or prove wholly useless. The hypodermic differs from the "method of Wood." The latter plan has for its object the local treatment of a local affection. The injection was supposed by Dr. Wood to be efficacious simply through the localization. Theoretically this method must be limited in its sphere of action to neuralgia or sciatica: to those cases alone accessible to the point of the injecting syringe. Mr. Hunter, in advancing the hypodermic method, maintained that localization of the injection in neuralgic cases was theoretically wrong and practically unnecessary. In 1858 and 1859 he advanced the following propositions:—1. That equal effect followed distant and local injections in neuralgic cases. 2. That by distant injections the ill-effects of repeated localization were avoided, such as local irritation, thickening of the skin, abscess, &c. 3. That diseases can be treated with benefit and curatively by this plan which are neither local nor neuralgic, and which have failed to receive benefit from other modes of medicinal administration. Mr. Hunter is inclined to think that the sickness which used rather frequently to follow the localization of the injection, and which is dreaded as an evil attending subcutaneous puncture, is in part due to the localization of the painful part, as he has hardly found sickness occur at all in his experience of the last few years. The first cases were published in 1859, on which occasion Mr. Hunter proved that diseases affecting the nervous system generally could be treated with benefit by the subcutaneous injection; the cases were serious ones, which had resisted other treatment, and were chiefly cases of insomnia and exhaustion from mania, delirium tremens, tetanus, etc. They exemplified the proposition that, "by the introduction of narcotics into the cellular membrane of the body, we have a mode of attacking and subduing cerebral excitability more rapid, more certain, and more sure in action than by the stomachic doses or narcotics." Cases of spinal irritability and excitement were then treated, and with benefit, in cases in which stomachic doses had failed to relieve. Instances were given of tetanus, chorea, epilepsy, etc. The hypodermic method is considered by the author superior to the stomachic, rectal, and endermic modes of medicinal administration, in emergent cases, in which the indications are for anodynes, antispasmodics, hypnotics, and nerve-tonics. And he has found greater and more permanent benefit to accrue from this mode of treatment than from the stomachic use of morphia, atropia, codeia, and other alkaloids. In many

diseases there can be no certainty about the stomachic dose. In delirium tremens, for instance, the pill, the draught, or powder, may lie in the stomach undigested; it may be vomited; it may be absorbed, partly or wholly, and, if the latter, so slowly as to do no real good. In the meanwhile the life of the patient is at stake, and death from exhaustion may occur before that sleep which would save the patient can be procured. The investigations of the author led him to believe the hypodermic administration of any alkaloid for the above-mentioned purposes to be more beneficial than the stomachic as regards rapidity of action, certainty of effect, purity of effect, greater permanence of effect, avoidance of exhaustion. 1. Rapidity of effect. With morphia sleep can be procured, or delirium quieted, in a few minutes. Atropine will affect the mouth in two or three minutes, and ease the pain of sciatica when injected into the tissue of the arm in five or ten minutes—in less time, in fact, than is usually occupied for absorption into the blood of the remedy from the stomach. 2. Certainty of effect. This, as a rule, ought to follow, for the whole amount (when properly and carefully) injected must be all absorbed ann circulated. But by the stomach one can only guess at the amount absorbed, and consequently one has often to repeat the dose to approach a certainty of effect. Enormous doses and quantities of opium may lie in the stomach doing no good in maniacal and other cases, but rather doing harm through the delay their inertness causes, and the uncertainty as to their absorption. In such cases the hypodermic injection of a small dose will often answer at once, while the opium still lies unabsorbed in the stomach. 3. Purity of effect. As injected into the cellular tissue, so is the agent absorbed, and its direct and sure effects manifest themselves upon the system. The same agent, e. g. morphia, given by the mouth will often cause headache, sickness, giddiness, hepatic and bowel constipation, etc. These ill effects, as they do not, as a rule, follow the hypodermic injection, must be due to the different mode of administration; nor need we wonder that a digesting membrane ever being filled with all kinds of pabulum should modify the vegetable alkaloids whilst chemically acting upon other compounds. 4. Greater permanence of effect. The author has had various cases of neuralgia and sciatica which for years resisted the internal administration of opium, morphia, belladonna, strychnia, etc., which cases he has cured with the injection of morphia, atropia, strychnia, or some other alkaloid. The cure

has no necessary dependence upon the number of injections. One lady who had suffered much srom sci tica had no pain for one year after one injection. Another patient has remained free from neuralgia since 1859 after a single injection. In two cases of sciatica, one a hatter, the other a driver to a florist, three or four years have elapsed since they were treated; there has been no relapse in either: both had walked lame and suffered pain for four or five years. The author attributes the greater benefits thus derived, partly to the first three advantages that he believes the hypodermic method to possess, and partly also to the slight shock that the diseased nerves sustain through the rapid way in which the alkaloid is brought into contact with them. 5. Avoidance of exhaustion. This is an important advantage of the hypodermic method, chiefly due to the rapidity of its action. In the violent spasms of lockjaw, of colic, or even of retention, life may be lost by delay; but even in minor cases, the longer the time that elapses before relief of the spasm or pain obtained, the greater the subsequent exhaustion. Many hours often elapse before any benefit follows the use of stomachic medicati n, but by the injection of the cellular tissue the desired relief can be obtained in from five to thirty minutes, instead of after many hours. In the case of delirium tremens the continuous muscular excitement—exhausting in proportion to its activity—is often stopped in a very few minutes, and then sleep follows. The tonic effects of certain medicines are more strikingly manifested by the hypodermic than by other modes of administration. So-called tonics may be thus administered with benefit, when they cannot be borne by the mouth. Quinine may, for instance, cause sickness and headache and fail to do good by the mouth, but greatly benefits by the cellular administration.* Agents not called tonics may act as such when thus employed, and when of the class usually called anodynes, may act more tonically than when given by the mouth. In this paper space must limit to a brief notice of morphia, thus used for its tonic effects. Morphia may be used subcutaneously, not to relieve pain, nor stop spasm, nor as a narcotic; but as a nerve-tonic in cases of great nervous exhaustion, or of irritability or great mental depression. In cases, in fact, in which the brain has been overtaxed, and the mental equilibrium lost, as in some cases of melancholia, accompanied by great and unnecessary anxiety, with insomnia.

*Paper by M. Desvignes, Med. Chir. Soc. Reports.

In mania *a potu* and in delirium tremens the author had even used the puncture, with morphia, so to steady and quiet the mind and nerves of the patient as to enable him in a few minutes to walk to his office and go through his duties. In the drunkard, as in the overtaxed and melancholic case, there is great mental excitement, and worry, anxiety, and insomnia. The stomachic anodyne will constantly fail to produce any effects; but the hypodermic dose, even where it fails to give sleep, will almost invariably remove the anxiety, the restless, and the nervous irritability, which are the states leading to exhaustion, and unfitting him for application to work. Thus administered, morphia has nerve-tonic effects, without the disadvantages that so often attend its use when given by the mouth; for it does not interfere with the liver or the bowels, it does not cloud the brain, occasion loss of appetite, nor cause sickness, with the well-regulated dose. In the mentally overtaxed or the melancholic patient, the night administration will not always cause sleep; it sometimes rather arouses the brain—it may even keep the patient awake, in "a calm state of dreamy doziness," which has the equivalent effect of good sleep the next day; the patient will arise refreshed, mentally stronger, and fit for his day's work. Upon the spinal marrow and its nerves the tonic effects of morphia are more marked when thus administered. The greater permanance of effect when cases have been cured by this plan, and by a comparatively smaller number of doses, seems to indicate that something more than the mere anodyne influence has been at work. A lady, Mrs. R., was subject to neuralgia in 1859. She had been at times relieved by morphia and opium; she was treated once by the morphia puncture, and has not since had neuralgia. Another patient, Mrs. W. W., was subject to repeated attacks of tic doloreux. The morphia injection cured it last year; she has had no return, notwithstanding a trip to St. Petersburg in bad weather. Sciatica is more than simple pain of the nerve; although of long standing, a single puncture with morphia may relieve all the pain, but the stiffness, the lameness, the deficient nutrition, remain for some time. The repetition of the injection will restore power of tone, and if three or four injections are used where these symptoms remain, in long-standing cases, the patients will often say they feel more power return with each injection. Stomachic doses do not produce these tonic effects so strikingly.

The President said the object was one of very great inter-

est, so great that the Council had appointed a committee to investigate it.

Mr. Moore supposed that no new method of treatment had more speedily come into common and deserved repute than that which had been initiated a few years ago by the author. The subcutaneous injection of morphia had from the first been extensively used in the cancer wards of the Middlesex Hospital, and had conferred an amount of relief upon the patients such as no previous method of subduing pain had ever effected. At the same time, he could bear out all that had been said by the author as to the speedy action of the remedy when thus introduced, and as to the common but not invariable exemption of the patients from sickness and loss of appetite after it. He (Mr. Moore) contrasted its effect with the endermic method in a case of cancer involving the nerves of the brachial plexus, and found more relief afforded by Mr. Hunter's plan. He had also employed the hypodermic method in the two arms of another cancer patient, one of which was œdematous, and had found the obstruction of the circulation much delay the action of the morphia. He was therefore disposed to think the general action of the anodyne essential to the relief of pain, as distinguished from its merely local action. But the most important practical use he had made of the hypodermic plan was that of prolonging the chloroform sleep for a long period after an operation. He first employed it more than three years ago, and he believed it had since been adopted by others. He had observed two especial benefits to result from it: one was the prevention of pain, and the other the postponing or obviating of chloroform sickness. When obliged, after removing cancer with the knife, to lay chloride of zinc on the fresh wound, he had injected morphia before the patient awoke from the effects of the chloroform, and had found sleep prolonged many hours, and pain entirely prevented. Sickness had been postponed by it for twelve hours. That it had been entirely prevented he could not assert; but when it did come on it was moderate, and had not occurred till towards the morning following the operation.

Dr. Wynn Williams, whilst agreeing with the author in his chief conclusions, wished to state that he had adopted the subcutaneous injection of morphia since it was first recommended by Alexander Wood, and in his experience local pain was more speedily relieved by injection locally. For instance, when the pain was neuralgic or of the nature of tic, and the

source of irritation eccentric, the injection had better be made as near as possible to the seat of pain, or, at any rate, in the track of nerves having a similar origin. Where the source of irritation was eccentric, the pain depending on disease of the brain or spinal chord, it would answer as well to inject in any other part. In the first class of cases the injection relieved the local pain before it induced sleep by its general action. As regards permanency of action, he did not feel sure that he had caught the author's meaning—i. e., whether he meant the sleep was more continuous, or that the cure was more permanent. He (Dr. Williams) had observed that the effects of morphia given by subcutaneous injection were much more speedy and passed more rapidly off than when administered by the mouth. When thus given, the dose would be larger and the action more continuous, the absorption of it into the system being more gradual. Another good effect was that, given by injection, opium did not constipate the bowels. It would always induce sleep when given in a sufficiently large dose. In a case of cancer of the rectum, which he had attended with Mr. Curling, four grains of morphia had been injected, and this would produce sleep for six hours, with slight intermissions. When the injection was made over the sacrum, the pain was relieved before sleep was induced; if elsewhere, not until the patient went to sleep.

Mr. Savory said all would agree that the hypodermic method was a valuable means of administering medicines, but he thought that some would hardly be prepared to accept all the conclusions at which the author had arrived. In comparing the introduction of drugs by this means with that by the stomach, it would need accurate and extended research before any general results could be obtained, so much must be allowed to the different action of different substances. For example, with regard to rapidity of effect, prussic acid seemed to pass from the stomach at a rate which could scarcely be exceeded, whereas woorara was hardly absorbed at all through the mucous membrane, and between these came a host of substances exhibiting every variety in this respect. Nor was this due to the previous action of the gastric juice, for some substances, such as strychnia, might be kept in it for a long period without any sensible alteration. But then there is another means of administering medicines and other substances—by the rectum. It was perhaps, not generally known that absorption is, under some conditions, more active from the rectum than from the stomach. Not of solids,

for these will remain a long while in the rectum without being dissolved; but when substances are in a state of complete solution, they may pass from the rectum far more quickly than from the stomach. Strychnia, for example, when in solution, will kill more rapidly and in smaller doses, when introduced by the rectum than when taken by the mouth. A fourth of a grain or even less, for instance. when passed into the rectum, will act with greater energy than a grain or more when given by the stomach. No doubt each of these several means is, in its turn, the best—no one can be said to possess a constant or uniform advantage over the others. We have yet to learn under what circumstances and for which remedies this or that method should be chosen; and the subject requires immediate investigation.

Dr. Fuller could bear witness to what the author had stated as to the general effect of injection of morphia. It was quite true that if the injection were made near the seat of pain the relief might be a little more speedy, but we owe to Mr. Hunter the observation that the injection of morphia in any part acted in the same way and to nearly the same extent. This was an important practical point, as the continued introduction at one part might lead to abscesses.

Mr. Hulke said he should not like the meeting to break up with the idea that four grains of morphia might be safely injected. He had known patients nearly lost by the injection of two thirds of a grain.

Dr. Wynn Williams explained that in his patient's case the large dose of four grains had been gradually arrived at after two years' treatment. He did not mean in any way to imply that this was a safe dose. Indeed, the dose he generally commenced with was only a quarter of a grain.

Dr. A. P. Stewart could not admit Mr. Moore's experiment on the anasarcous compared with the healthy limb, as conclusive regarding the local and general action of morphia; for in the anasarcous limb there was a total arrest of absorption, without which there could be no therapeutical action. As to the inconvenience of hypodermic injections, the could not speak so lightly of them as others did. He had repeatedly seen nausea, vomiting, vertigo, and even mild delirium, following the subcutaneous injection of morphia. As regards the use of quinine, he had on a former occasion made some inquiry as to effects, both local and general, of its hypodermic use, the author of the paper (M. Desvignes) having been silent as to the existence of any inconvenience, and he (Dr.

Stewart) had hoped that Mr. Moore would have given the Society the results of his recent and very interesting experiments. He (Dr. Stewart) had often administered remedies by the rectum. His favorite method of treating intestinal obstructions (ileus) had long been the injection of extract of belladonna in doses of two or three grains. In one case, seven or eight grains had been given by mistake. The absence of any serious symptoms was probably attributable to the great abdominal distension, which prevented absorption taking place to any extent; but in other cases, after repeated smaller doses, the wild and extravagant delirium of poisoning by belladonna had been fully developed. He was not aware of the fact stated by Mr. Savory, that strychnia acted more powerfully when given by the rectum. But such a conclusion was not warranted by the fact of the prompt and powerful action of one-sixth of a grain so administered, for he (Dr. Stewart) never gave by the mouth a larger dose than the fiftieth of a grain to begin with, and never increased it beyond the twenty fifth, and from these doses he obtained very decided results. As regards the general subject of the hypodermic injection of remedies, he thought the Society should suspend judgment until the committee had reported on it.

The President asked if the results of Mr. Hunter's paper had been drawn from public or private practice, and if patients in private practice objected to the treatment.

Mr. Hunter, in reply to the President, said that since the cases which he had treated at St. George's Hospital, he had drawn his conclusions upon patients of a public charity (the Royal Pimlico Dispensary,) but had also largely used the treatment in private practice. For the most part he found no objection on the part of patients to the use of the plan. A nervous patient might occasionally have objected to it, having heard it called an operation. It was one of the simplest kind, giving hardly any or no pain, and causing no irritation, if the operator attended to simple rules. The puncture was almost painless if made in the outer part of the arm; it was more painful if localized to the tender neuralgic site. In answer to Dr. Williams, the author said he had employed the treatment in neuralgia of centric and eccentric origin. He had not found, taking the cases collectively, that the results were more favorable, if localized, in those of eccentric origin. In incurable neuralgia of centric origin the relief was the same in most cases, wherever injected. Sleep was not at all a necessary result of the morphine puncture; many patients

did not sleep from it. The injected alkaloid seemed at once to be engaged in removing the pain or the mental excitement existing at the time of the puncture. Sleep might follow or not, according to the dose. In reply to Dr. Stewart, Dr. Hunter said that sickness and giddiness might certainly occur from the use of the morphia, but such cases were quite the exception. They might result from the injection of a dose too large for the nature of the case, or from some idiosyncrasy of the patient. He had very rarely found sickness to follow the injection in his practice of the last few years (though using the plan daily), since he had injected smaller doses of the alkaloids, and had for the most part ceased to localize. He thought four grains a fatal quantity to inject beneath the human skin, except with the well-accredited understanding that the patient had been accustomed to a much larger dose by the mouth. He had himself injected more than four grains at a time, but the patient had for many years taken by the mouth thirty grains of morphia daily. One grain of morphia was quite the maximum for a first injection, and then only in most urgent cases—as in delirium tremens with great excitement. Half a grain of morphia was a full injecting dose for the treatment of most cases: a much less quantity was often quite sufficient. He quite believed in greater permanence of effect by this plan than by the stomachic dose. Atropine, for instance, had often failed, when given daily by the mouth, to do more than palliate; but the same dose (a thirtieth of a grain) by the cellular tissue would perhaps succeed if administered once or twice. With regard to Mr. Savory's observations, the author wished him to understand that the treatment as proposed by him was only for *emergent* cases; as for those requiring speedy relief from pain, or for those in which medicines failed in their effect as usually given. He could cite one or more instances of each class of diseases mentioned in the diagram in which stomachic treatment had previously failed to relieve the patient; and in most cases the same alkaloid was used hypodermically with permanent effect. Mr. Hunter readily allowed that very speedy action followed the rectal administration of some medicines. It might be even quicker than the hypodermic method; but he considered it a less certain and less liable mode of introducing the medicine. It was one which could not always be recommended for cases of the description for which the hypodermic plan seemed to be well adapted.

ARSENIC EATING.

Dr. Maclagan, of Edinburgh, on a visit to Styria in the spring of this year, obtained conclusive evidence of the existence of this practice, and has published in the *Edinburgh Medical Journal* a circumstantial account of what he saw. We quote one case, in which it will be seen no jugglery could have been practised: "Mathias Schober, a healthy-looking, fresh-complexioned, fairly muscular young man, of the age of 26 years, and about five feet nine inches in height, a native of Liegest, and employed as a house servant there, said he had taken Huttereich for about a year and a half—not, however, with arsenic, but the yellow arsenic, or orpiment, of which he took a specimen from his pocket and showed it to me. Of this I retained a piece for chemical investigation. He informed me that he took the arsenic in order to keep strong, though he had never suffered from ill health. He said he had never experienced any bad effects, even when he first began using it; that he had at first taken rather less than a grain every fortnight; that he now took it twice a week; and that on omitting to take it for any longer period he experienced a longing for it, which was relieved by a repition of the usual dose. His reason for taking the orpiment instead of white arsenic was, that it was more easily procured; but having professed himself quite indifferent whether it were arsenious acid or the sulphuret, Dr. Knappe produced a paper containing the former (of which I also kept a sample), and having asked him to choose out a piece such as he was in the habit of taking, it was weighed, and found to be nearly five grains. We had no finer weight than one grain; but the piece of arsenic was much over four, though less than five. Dr. Knappe, having carefully ground this to powder on a clean piece paper, it was transferred to a small piece of plain white bread, about as large as a man's thumb-nail, and this the doctor put into his mouth. Schober chewed it and swallowed it, and then swallowed another portion of bread the same size immediately after. This was at 9:30 A. M. He stayed with us a few minutes, but he had to return to his work, promising, however, to come back in a short while.

This he did at 11:30, two hours after, and made water in my presence to the amount of what I estimated at twenty-eight ounces, into a vessel previously carefully cleaned, and the urine was put into bottles thoroughly washed by myself. Unfortunately, in the hurry of my departure, in trying to pack these bottles into my hat-box, I broke one, and thus lost part of the urine. Since my arrival in this country I subjected the contents of the two remaining bottles to chemical analysis, adopting the distillation process of Dr. Taylor as the most convenient way of separating arsenic from the organic matters of the urine. For this purpose the urine was carefully evaporated to dryness in a clean retort. The nearly dry residue was covered with strong hydrochloric acid, and distilled into a well-cooled receiver. The product, amounting to about half an ounce, was a clear, feebly pinkish fluid, thirty minims of which, when treated both by Reinsch's and Marsh's process, gave very characteristic arsenical deposits. Schober also came the following day to see me, having taken no more arsenic since the dose which he had swallowed before me twenty-six hours previously. I again secured some urine which he passed in my presence, and this, when chemically examined as above, also yielded arsenic freely." Mr. Maclagan adds—"It is evident that the confirmation of the existence of the practice of arsenic-eating must lead us to modify some of the opinions that are entertained with regard to the influence of habit on the action of poisons. It has long been notorious that, by habit, the human body may be brought to bear with impunity doses of organic poisons, such as opium, which, to those unaccustomed to them, would certainly prove fatal; but 'it has hitherto been considered by toxicologists that, except within very narrow limits, habit appears to exercise no influence on the action of mineral poisons.' (Taylor "On Poisons," p. 89.) Though the experiment of M. Flandin, by which he proved that he could bring dogs to bear fifteen grains of arsenious acid in powder in twenty-four hours without injury to their appetite or health, and the practice of administering arsenic to horses, have long been known as pointing rather in the contrary direction, this has been supposed to be due to some peculiarity in the constitution of the lower animals. The facts which have been ascertained with regard to the Styrian arsenic-eaters, and which the above observations confirm, entitle us to maintain that the modifying effect of habit is not confined to organic poisons, but extends to those of mineral nature—at all events, to arsenic." —*Chem. News*, July 21, 1865.

ON THE VEGETABLE ORIGIN OF DIAMONDS.

We have already mentioned that Professor Goeppert obtained the prize offered by the Dutch Scientific Society for an Essay on the vegetable origin of Diamonds, and we are now able to give a short abstract of this highly interesting essay.

Since Lavoisier showed that diamonds were composed of pure carbon, very different opinions have been entertained about their origin, some believing them to be produced by Plutonic, others by Neptunian agency. Newton inclined towards the latter view, and Brewster agrees with him. In 1842 Liebig pronounced the formation of diamonds to be the result of an uninterrupted process of chemical decomposition. "Imagine this chemical decomposition taking place in a fluid rich in carbon, out of which will issue, as a final result of its chemical decomposition, pure carbon, and that in a crystallized form." Indeed, a high temperature is adverse to the formation of diamonds, as diamonds become black when subjected to a high degree of temperature, and, according to Despretz's experiments, they are even converted into graphite and coke. The black diamonds, or so-called "carbonates of Bahia," are in part a mixture of uncrystallized carbon and diamonds, as shown by the process of combustion, to which, at my desire, they were submitted by Professor Lowig. That diamonds originated under Neptunian agency is further proved by the frequent occurrence of crystals in them. I have seen them in hundreds of different specimens, and even small cavities containing them. In my essay I have given ample proof that at one time diamonds were soft bodies. Hitherto only one diamond, in the possession of the Emperor of the Brazils, has been known, on which the impression of a grain of sand was visible. I have before me a rhombic dodecahedron, on the whole surface of which impressions of grains of sand are visible, and a similar crystal of the black diamond on which the same impressions exist. In a third there is a cavity with bent and broken crystals of an unknown kind. Two others, an octahedron and a rhombic dodecahedron, have on their surface deep impressions of crystals which are not those of

diamonds. The Neptunian origin of diamonds can therefore no longer be doubted. G. Bischof also thinks that, after the discovery of iron pyrites in the diamond, any doubt respecting the formation of diamonds in a moist way has been dispelled. In close connection with these observations is the question about the vegetable origin of diamonds, which in a measure was answered by Newton, who regarded them, on account of their great power of reflecting light, long before their true chemical condition was ascertained, to be coagulated fatty or oily bodies. Jameson and Wilson endeavored to prove this theoretically, Petzholdt practically, by the vegetable cells found in the ashes of diamonds. The vegetable origin of coal and anthracite, and their sedimentary formation, having been thoroughly established, I examined, starting from this point, graphite (hitherto regarded as being without structure, but doubtless having a Neptunian origin) and the diamond; and by the experience I have gained from observing, for a number of years, chalcedony and amber, I am able to distinguish sufficiently between mechanical formations and formations of a vegetable origin. I have not yet attained any results with respect to graphite, but in diamonds I have found numerous foreign bodies enclosed, of which, if they cannot be said to be evidently and undoubtedly vegetable in their origin, it would on the other hand be difficult to deny their vegetable nature altogether. The careful figures which will accompany my essay will enable others to judge on this point, and will, if nothing else, open up the way for further researches.—*London Pharm. Journ.*, July 1, 1865, from *Amer. Journal of Pharmacy.*

ON THE DYSMENORRHŒA, METRORRHAGIA, OVARITIS, AND STERILITY ASSOCIATED WITH A PECULIAR FORM OF THE CERVIX UTERI, AND THE TREATMENT BY DIVISION.

By ROBERT BARNES, M. D.

The author described and figured the form of cervix uteri which projected into the vagina as a conical body, the vagina appearing to be reflected off at a point nearer the os internum

than normal. The os externum was usually minute, scarcely admitting the uterine sound. This (the os externum) was the real seat of constriction. The os internum nominally was a narrow opening; and in these cases of dysmenorrhœa and sterility it was commonly found to be of normal calibre. It was, therefore, unnecessary to divide it, on account of the close proximity of the large vessels and plexuses running into the uterus on a level with it. The author maintained that t is form of cervix was a cause also of retro- and peri-uterine hæmatocele, and of peritonitis. All these consequences might arise in single women. In the married state the evils enumerated were aggravated, and new ones arose. Women with this peculiarity were generally sterile; and if they became pregnant it was early in life, before the further consequences were developed. These were flexions, deviations, inflammation of the cervix and body, hypertrophy. Discussing the question of treatment, the author showed that dilatation was unsatisfactory; that incision of the os internum, as practised by Dr. Simpson's single bistourie caché, and by Dr. Greenhalgh's double bistourie caché, was unsafe and superfluous. He objected to the latter instrument, especially, that it must cut as it was set—that it was too much of an automatic machine, not leaving scope for the judgment of the operator. His (Dr. Barnes's) own instrument, constructed like a pair of scissors, acted on the same principle as Dr. Sims's; it divided only the os externum, so as to open the cavity of the cervix; the part to be cut being first seized between the two blades, the operation was perfectly free from risk; the hemorrhage was usually slight, and a good os was made. He had performed the operation many times, both in hospital and private practice, and was well satisfied with the results. One advantage of incision over dilatation was, that it relieved the engorgement and inflammation.

In illustration of the behavior of the conical cervix uteri under labor, two cases were narrated. In one, the cervix and os uteri had returned to their original state, although a fœtus of four-and a-half or five months' development had been expelled through them. In the other case it was necessary to open the cervix artificially by means of the author's cervical dilator and incisions in order to deliver a full-grown child. In both cases pelvic cellulitis followed labor.

Dr. Baker Brown thanked Dr. Barnes for having brought the subject forward. He agreed with most of what had been

stated in the paper; was opposed to dilatation as peing inefficient and temporary. He described his mode of operating, which was to place the patient in the lithotomy position, and having introduced a bent speculum, he seized the os with a pair of forceps, and divided it with Simpson's hysterotome. He never divided the internal os; always used a plug of oiled lint to prevent hemorrhage. He regretted that the operation had lately been condemned by a high authority, but believed it was the only efficient and permanent remedy for these painful affections.

Dr. Greenhalgh was surprised to hear the President's opinion that the seat of stricture in these cases was mostly at the external os. He (Dr. Greenhalgh), on the contrary, expressed his conviction that in the great majority of cases the stricture is situated at the internal os, and consequently he recommended division of the internal as well as the external os. After division he usually introduced one of his bilateral expanding stems, which keeps up steady dilatation and prevents contraction. As regarded hemorrhage, which some appeared so to dread, he had never but once met with it, though he had operated in nearly one hundred cases. He always used his own bilateral instrument, which cuts both sides at once. The advantages of his plan of operating were, he believed, extreme exactitude, facility, painlessness, and the avoidance of any personal exposure. He expressed his surprise at the remark of Mr. Brown that he never divided the internal os, when he (Dr. Greenhalgh) had seen him on several occasions freely incise the internal os in the cases under consideration.

Mr. Baker Brown, in answer to Dr. Greenhalgh, said that that gentleman must be mistaken in what he had seen at the London Surgical Home. He repeated that he never in cases of dysmenorrhœa cut through the internal os. Dr. Greenhalgh was evidently confounding this operation with that for fibrous tumor, retroversion, retroflexion, &c., of the uterus, in which he (Mr. Brown) incised freely, and generally through the internal os.

Dr. Routh fully confirmed Dr. Greenlagh's views. For his own part he believed in by far the majority of cases the obstruction was at the *inner* and not the *outer* os; although he did not deny that in some cases of conoid cervix it was present at the external os. He agreed with Dr. Gream in believing that Dr. Sim's plan of operating would occasionally leave a deformed cervix for life; and he did not think it was necessary to cut through the entire cervix. The instrument

Dr. Greenhalgh had invented obviated all danger from hemorrhage. The same was true of his (Dr. Routh's) instrument, which he, however, preferred, because on the bend, and therefore more easy of application in *flexion* cases. A little bleeding was salutary. In most of these cases there was a complication of congestion, which the very incision, by the subsequent hemorrhage, relieved. But there was no doubt that such incisions, however freely made, had a tendency to contract again. Hence it was necessary to keep the cut made patent by some internal uterine pessary, and for some time, it might be for months, so as to allow it to become properly lined with mucous membrane and incontractible. He knew several persons now walking about London with these. In other cases their removal had been followed by conjugal relations and pregnancy, though previously sterile for years. Of the use of sponge-tents and other modes of artificial dilatation, in these cases, he spoke disparagingly. He had seen cellular abscess and death follow their use. They should be used with the greatest caution. He also believed cases of dysmenorrhœa were more common than was generally supposed. Not only was the seat of obstruction more frequently at the *internal* os than the *external*, but, indeed, in many cases, the external os was patent and abnormally so, as shown by Dr. Henry Bennet. And there were many, and by far more numerous, cases of dysmenorrhœa which were in no way due to stricture at either os. As these cases were not, however, referred to by Dr. Barnes, he did not allude to them further. * * * * * * *

Dr. Graily Hewitt thought that the two questions of the treatment of dysmenorrhœa and of sterility by means of incisions of the cervix uteri had been too much mixed up together. He would say a few words first respecting dysmenorrhœa. He believed that in bad cases of dysmenorrhœa the condition present was frequently retention of the fluid in the uterus, and that this retention caused the pain; and he had been at some trouble to prove this. But, on the other hand, he also thought that the condition was capable of being relieved, in most cases, without resort to mechanical treatment of the cervix uteri. The great thing was to diminish the flow of blood, and this could be regulated by general measures; but that there were a few cases in which such general measures were useless he admitted. He differed from the President in reference to the most common seat of the constriction; for although there were cases in which the os uteri was con

genitally extremely small and narrow, yet in the larger number of cases of dysmenorrhœa the impediment was situated at the junction of the cervix with the body of the uterus. With regard to the best method of applying mechanical relief when such was required, he thought that cases might be treated on their own merits. Where the cervix was hard and dense, the cutting operation was most indicated, the difficulty being here the greatest; but under other circumstances he preferred the use of tents as dilators. The sea-tangle tent was, he considered, a perfectly safe means of dilating the cervix uteri; but, he would repeat, the cases were few requiring this treatment. As to the mode of incising the cervix or os uteri, here again the operation must be selected according to the case: no one operation would be suited to all circumstances. He would next say a few words on the subject of sterility. It was undoubted that in certain cases the cure of sterility could be effected by dilating the cervix uteri, and much had been said as to the superiority of one mode of dilating over another. The fact was, that so long as the canal of the cervix was a little enlarged, whether by incision or dilatation, the necessary end would be served. The great object was to secure a tolerable patency of the canal at about the menstrual period, when conception was most likely to occur. Supposing the sterility to be cured, the dysmenorrhœa which might be associated with it would be also, in all probability, permanently relieved.

Dr. Marion Sims was surprised at the great difference of opinion expressed by previous speakers as to the seat of the obstruction, but he agreed with those who thought it was at the lower orifice. He then went into some statistical details of his own practice, and laid great stress upon the frequency of curvature of the cervix as a cause of obstruction at the internal os. Though it might, he thought, lead to an actual narrowing of the canal, yet he believed this was an extremely rare occurrence. But in cases of induration and conoidity the os tincæ was abnormally contracted in every case he had seen. Indeed, a conical indurated cervix was incompatible with a normal os tincæ, the existence of the one almost necessarily implying that of the other. With regard to cases referred to by Dr. Gream and Mr. S. Wells, in which the tissue of the cervix had been too largely incised, so that the lips of the os were everted and rolled backwards, he had never seen any such result after his method of operating, but had witnessed it after the metrotome caché; and he attributed it to this—because it cut deeper into the sides of the supra-vaginal

portion of the cervix, and so divided the circular muscular fibres, which are naturally antagonistic to the longitudinal fibres. By his (Dr. Sims's) plan of operating, the incisions upward were more superficial, though the opening of the os was about the same in both methods.

The President, in closing the discussion, said that he only directed attention to one class of cases of dysmenorrhœa—that, namely, associated with the peculiar projecting form of cervix uteri, and usually attended by sterility. This was the form that required treatment by incision. The obstruction that required division was the os externum or vaginal portion. The os internum normally was a narrow canal. Dr. Greenhalgh had passed his instrument through it as preliminary to his operation. If it admitted this instrument, the os was of full normal size, and could not require cutting. His (the President's) instrument and operation were perfectly safe and efficient. He thought, after hearing Dr. Sims's remarks, that he had underrated the importance and frequency of flexion at the neck as a cause of obstruction.—*Proceedings of the Obstetrical Society of London*, in *London Lancet*. Chicago Journal

ON DIABETES AND ITS TREATMENT.

By Dr. H. BENCE JONES, A.M., F.R.S.

Each grain of starch that is taken as food, when acted on by the saliva or pancreatic fluid, is converted into sugar and becomes a source of fuel or power and ultimately passes out of the body as carbonic acid and water.

In diabetes the starch is still changed into sugar: but in the circulation and in the extravascular or parenchymatous structures the further change is partly or wholly stopped; more or less of the sugar remains as sugar, part reaches the kidneys and is thrown out in the urine, part exists in the structures unchanged; and thus the system is deprived of one part of that conversion of latent into active force on which the nutrition and power of the organ depends.

In the body or out of the body, when once a series of chemical action is set up, the series tends to become continu-

ous; it propagates itself, unless a change of conditions occurs. For example, grape juice will remain as grape juice, if kept from the action of other substances. Under well-known conditions it will ferment, and continue fermenting, as long as sugar, and ferment, and the proper temperature are present. If the conditions are slightly varied, variations in the products will be observed. The series of actions will not pass rapidly from grape juice to alcohol, to vinegar, or to putrefaction; but according to the conditions one action or another action will be set up or will continue as long as that action is possible.

In health and in diabetes the sugar is subjected to different conditions. In health the chemical changes are propagated and continued to their full extent; whilst in diabetes the conditions necessary for perfect change are wholly or partly wanting. These conditions, on which the changes depend, are chiefly three. 1st. The proper temperature; 2d. The presence of a not immoderate quantity of sugar; 3d. The presence and activity of a ferment.

On each of these conditions a few words are necessary.

First, the internal temperature of the body, under all circumstances, is subject to so small a variation, that at present there is no proof that such a reduction can occur as can check the chemical actions in the human body, though under certain circumstances smell animals can be exposed to cold so that sugar may be made to appear in the urine.—(*Proceedings of the Royal Society, December* 15, 1864.)

Secondly, by the most careful investigation, I have satisfied myself that Professor Brücke is right in saying that healthy urine contains sugar—that is, the amount of sugar derived from the food, or from the changes going on in the textures, is at all times more than can be entirely changed in the circulation and in the tissues. If, then, a considerable amount more is thrown into the circulation, some of it will pass out in the urine. Thus an injection of sugar into the rectum when absorbed causes temporary diabetes; so, also, large quantities of sugar, fruit, and farinaceous food tend to produce diabetes. Thus, also, if Bernard's amyloid or glycogenic substance were produced in excess in the liver, diabetes would result.

Thirdly, the ferment, the prime cause of change, has not yet been insulated. Whether it be the albuminous substance of the saliva or pancreatic fluid, or some other of the many albuminous substances in the blood, it requires for its action heat, the presence of alkali, and an undisturbed circulation of the changing fluid.

With regard to the effect of alkalies, something will be said when I speak of the treatment of diabetes; but concerning the influence of unobstructed chemical action some remarkable physiological experiments must here be mentioned, because they not only furnish the most striking illustrations of the relations of mechanical to chemical disease, but because they also help to account for the effect of sudden mental shocks and nervous disturbances, which do so much harm to the diabetic patient.

Bernard made the great discovery that the mechanical injury of the floor of the fourth ventricle alters the chemical actions going on in the body so as to cause sugar in excess to appear in the urine. This is a most remarkable demonstration of the relation which subsists between mechanical and chemical actions in the living body.

M. Schiff, in his "Untersuchung uber Zuckerbildung" (1859), states that this diabetes results from injury of the vaso-motor nerves of the abdominal organs which arise from the thalami optici and the crura cerebri—*partent des couches optiques et des pedoncules cérébraux;* and he also shows that by injury of other parts of the nervous system temporary or permanent diabetes is produced.

Thus cutting the posterior roots of the nerves arising from the cervical portion of the cord, leaving the anterior roots untouched, causes temporary appearance of sugar (irritative diabetes): whilst by division of the anterior roots on a level with or above the fourth cervical vertebra, permanent (or paralytic) diabetes results. These injuries, he says, cause an irritation or a paralysis of the vaso-motor nerves. The vessels of the liver become dilated and distended; and as a consequence there is an excessive secretion of sugar by the liver.

The permanent diabetes may be thus occasioned: but it is far more probable that the temporary diabetes is owing to the mechanical injury of the nervous system so affecting the vessels that the chemical changes are interrupted. The same phenomenon is seen in every fermentation. The chemical action is temporarily stopped when the fermenting fluid is disturbed by any sudden change.

These conditions of change may in diabetes be affected singly or all simultaneously. When the affection reaches to the extent of stopping the chemical change in the vegetable or animal sugar in the body, diabetes, intermittent or permanent, is the result.

That the disease is only a little way distant from health is

shown by the existence of sugar in the urine in the healthy state; so that a small quantity of sugar in the urine is no proof of disease; and here, as elsewhere, there is no defined limit where health ends and disease begins.

Diabetes is the arrest of a healthy state; an increased quantity of sugar appearing in the urine, because the actions that constitute health are stopped.

In perhaps half the cases of diabetes the arrest of change in the food-sugar constitutes the complaint. This is proved by the fact that when a strict anti-farinaceous diet is observed the abnormal amount of sugar ceases, and the patient is well as long as he keeps to the strict diet. When this fact was published in 1806 by Dupuytren and Thenard, they used these words:—"Que le traitement qui consiste surtout dans un régime purement animal a le même degré d'efficacité que le quinquina dans les fièvres intermitentes."—(*Annales de Chemie, vol.* 59, p. 45.)

But it was soon found that cases occurred in which a strictly anti-farinaceous diet, consisting of animal food and water, did not stop the sugar in the urine. For days and weeks not a grain of vegetable starch or sugar may be taken as food, and yet sugar in excess will exist in the urine. Whence does this sugar come? It must either be taken in the animal food or it must be produced in the body.

Previous to Bernard's discoveries, this production of sugar when no vegetable food was taken admitted of no explanation. Now, the discovery of the amylaid substance in the liver, and of inosite in the muscles, lungs, brain, and other organs, gives a full solution of the difficulty. In the chemical changes going on in the body, animal starch is formed in the liver, and in other organs as in the prostate gland, and sugar in the muscles; not as in vegetables, by the fixation of carbon and the decomposition of water by the action of light, but more probably by the gradual splitting up of the higher organic compounds of the organs whilst performing their functions.

The good effect of an anti-farinaceous diet in some cases, and its want of effect in others, marks the two great divisions of the disease—the two stages in diabetes. In the first stage vegetable sugar alone ceases to go through the healthy chemical changes, whilst the animal sugar is entirely changed; in the second stage animal sugar as well as vegetable sugar are more or less unchanged. It may be concluded that animal sugar is more readily changed than vegetable sugar; and

when in diabetes an anti-farinaceous diet has no marked effect, then the conditions of change of the sugar in the body are furthest from the healthy state.

There is sufficient evidence that diabetes does not always progress from one stage to the other. The disease may halt anywhere in its progress, and remain stationary for years, or get better or worse. A gentleman has consulted me for the last four years occasionally; he is now fifty-seven. When I last saw him the specific gravity of the urine was 1020, about three pints in twenty-four hours, containing about four grains of sugar to the ounce. He had been diabetic for twenty-nine years, during which time he married, and has now healthy children grown up. When he takes care about his diet, the sugar and symptoms vanish, but when careless, the symptoms return, and the sugar can be found in the urine.

Diabetes, then, in its mildest or first form, is the loss of power to change the sugar of the food; in its more advanced or more intense form, it is the loss of power to change the sugar produced in the organs and textures of the body, as well as in the food. The changes in the animal as well as vegetable sugar are arrested.

[Almost every remedy in the Pharmacopœia has been tried with the view of arresting the excretion of sugar, but none has any constant effect. Meanwhile, the effect of diet is far beyond that of any known remedy.]

An anti-farinaceous, or, in other words, an anti-saccharine diet will remove the sugar from the urine, and stop all the symptoms of the complaint in all those cases in which the power of consuming the animal sugar remains unaffected.

Even when the consumption of the animal sugar is imperfect or impossible, an anti saccharine diet will lessen the thirst, the flow of water, the dryness of the mouth, and even the constipation, and check, though it may not stop, the waste.

The simplest formula for the diet may be thus stated. All animal produce, including fish, flesh, fowl, game, eggs, cream, and meat soup should be taken; and all vegetable food that contains starch, dextrin, and sugar should be avoided.

As generally it is of the utmost importance to shun the forbidden food, I shall dwell upon it first.

The vegetable substances that contain most starch, dextrin, and sugar are rice, maize, arrowroot, sago, potatoes, oatmeal, peas, beans, bread, biscuit, toast, maccaroni, vermicelli, and all confectionery.

Fruits are even worse than vegetables. Apricots, plums, peaches, cherries, pears, gooseberries, are nearly as bad, and some worse, than rice and maize. Stout, porter, and ale, cider, port, Madeira, champagne, and sherry are more or less highly saccharine; cocoa and chocolate contain nearly 20 per cent. of starch and dextrin naturally, and more is often added.

The harm of each of these substances may be determined by the amount of starch, dextrin, and sugar they contain.

The following table, in which the fruits and farinaceous vegetables are taken as perfectly dry, will answer many questions regarding the diet of a diabetic patient:

	Amount of Starch, Dextrin or Sugar.
Ripe dry Apricots, . .	about 93 per cent.
" Plums, . . .	" 92 "
" Peaches, . .	" 86 "
" Cherries, . .	" 85 "
" Pears, . . .	" 84 "
" Figs, . . .	" 79 "
" Gooseberries, .	" 37 "
Dry Rice, ...	" 90 "
" Maize, ...	" 88 "
" Arrowroot, . . .	" 77 "
" Potatoes, . . .	" 76 "
" Oatmeal, . . .	" 70 "
" Peas, ...	" 67 "
" Beans, ...	" 67 "
" Bread, ...	" 61 "
" Milk, ...	" 21 "
Stout, . . about 45 to 64 grs. of sugar per ounce.	
Porter, . " 23 " 40	" "
Ale, . . " 12 " 45	" "
Sweet Cider, " 18 " 44	" "
Port, . . " 16 " 34	" "
Madeira, . " 6 " 66	" "
Champagne, " 6 " 28	" "
Sherry, . " 0 " 12	" "

If dry rice contains 90 per cent. of starch, dextrin, and sugar, and potatoes contain 76 per cent. of starch and dextrin, and if all the starch and dextrin pass off in the urine as sugar, it is evident that to forbid potatoes and to allow instead an equal quantity of rice, is simply ordering the quantity of sugar from this source in the urine to be increased 14 per

cent., thus adding to the thirst and waste. Or if half-a-pint of port wine is forbidden containing from 128 to 272 grs. of sugar, and if a pint of porter or stout is ordered which contains from 368 to 960 grs. of sugar, it is clear that the quantity of sugar in the urine will thus be increased from half-an-ounce to an ounce-and-a-half daily.

Before passing to the best diabetic diet, there are two substances—bread and milk--which require to be further mentioned here.

Ordinary bread contains water, salts, starch, dextrin, sugar, and gluten.

If the salts, starch, dextrin, and sugar are washed away, the gluten remains, which, in a chemical point of view, is as unobjectionable as meat.

In making the different kinds of gluten bread this washing is more or less perfectly performed.

In the following analysis the water, starch, dextrin, and sugar were determined, the residue or difference was taken as gluten:

	Water.	Starch and Dextrin.	Sugar.	Gluten.
Ordidary bread, . .	36	49	1	23 per cent.
Aerated bread, . .	37	42	2	19 "
Gluten bread from Toulouse, . . .	2	16 to 44	0	82 to 54 "
Dried bread, . . .	2	60	1	37 "

The best washed gluten bread contains less starch than bran cakes or any brown bread; Dr. Pavey's almond bread is free from all starch, but the almond flour must be well washed to remove the sugar and dextrin, of which 10 per cent. are present.

Badly-washed gluten may be made into dry bread containing bulk for bulk more starch than ordinary undried bread; thus an excess of gluten bread may keep up the amount of sugar in the urine, and prevent an improvement in the symptoms.

With regard to milk, one hundred parts may be taken to contain three parts of lactine, or about half-an-ounce of lactine exists in a pint of milk. If all of this animal sugar was incapable of being consumed in the system, milk would be nearly as injurious as an equal quantity of many wines, and the best sweet ale; but experiment shows that this sugar is often partly or entirely consumed.

A diabetic patient lived upon butchers' meat alone for two

two days. The quantity of urine passed was forty ounces the first, and forty-two ounces the second day; specific gravity, 1029-0. No trace of sugar could be found. He then took milk for two days; the first day eighty-eight ounces, the second day ninety-nine ounces. The urine was forty-five and a-half ounces the first day; specific gravity, 1024-1: and the second day sixty-nine ounces; specific gravity, 1011-0. Sixty-seven grains only of sugar were passed the first day, and twenty-three the second day.

At a more advanced period of the disease, when strictly animal diet did not cause the sugar to disappear from the urine, milk alone was again taken.

The first day 138 ounces of milk were drank; the urine was 61 ounces; specific gravity, 1030-5. The second day 88 ounces of milk were taken; the urine was 34½ ounces; specific gravity, 1027-8. The quantity of sugar in the urine was 854 grains the first day, and 414 grains the second day. At this time, on animal diet alone, one day 280 grains of sugar were passed, and the next day 600 grains.

Thus milk is more or less injurious according to the stage of the complaint. When animal sugar can be consumed milk is comparatively harmless.

In the advanced stages of the complaint curds or sour milk, with the acid nearly neutralized by potass, soda, or ammonia, would be as unobjectionable as gluten bread.

There are two great ends to be gained by the use of medicines in diabetes.

Of these the first and most important is to promote the oxidation of the sugar; or, failing this, to compensate the system for the loss of saccharine fuel, and the consequent loss of power and nutrition by promoting the supply and oxidation of the oleaginous fuel.

Of all the medicines that can be given for the promotion of the oxidation, whether of sugar or fat, in the body, iron and alkalies are the most energetic; and hence, beyond all other remedies, iron or ammonio-citrate of iron with excess of ammonia, or with other alkalies, are the best medicines for diabetes. This iron may be given in potass or Vichy or in Fachingen water, and that preparation which confines the bowels least is most to be preferred. Hence the potassio-tartrate and Griffith's mixture are often used.

Alkalies without iron promote oxidation. This is very evident in the copper test for sugar. M. Miahle even has stated that alkalies are the specific for diabetes; without doubt they

are of importance in promoting oxidation. Soda or potass may be given in the caustic state or as carbonates. Carbonate of ammonia in ten, fifteen, or even twenty-grain doses thrice daily in any gaseous mineral lessens the thirst.

Long since Professor Graham tried the phosphate of soda, with three equivalents of soda, on the ground that the blood required this substance and could not get it in the animal food. I have not found any great advantage from its use.

Vichy water, more particularly the Celestin, is recommended by M. Bouchardat. It contains between eighty and ninety grains of carbonated alkali and alkaline earths in a quart of water. The Hospital spring contains about ninety-six grains, the Grand Gille ninety-two, the Hautrive eighty-nine, and the Celestin eighty-five grains to a quart of water.

Carlsbad Sprudel water and the more aperient Muhl spring is highly praised by Dr. J. Seegen. It contains about one-fourth or less of the alkali of Vichy water, but half a drachm or more of sulphate of soda in each quart gives an aperient action which the common salt of Vichy water rarely possesses. Marienbad Kreutzbrun water is twice as aperient, but rather less alkaline than Carlsbad Sprudel. Fachingen water has one-third or more of the alkaline power of Vichy. Seltzer water one-sixth.

Besides alkalies some animal substances are thought to promote change in the sugar in diabetes. Of these rennet and pepsine may be mentioned. In 1852 Dr. James Gray published some remarkable results in the 'Edinburgh Monthly Medical Journal,' p. 396, but I am not satisfied that rennet is very useful in diabetes. It is an albuminous substance in a state of change, and, therefore, it exactly fulfils the conditions required in the undiscovered specific for diabetes. It should be well washed with water to remove the adhering sugar and dextrin, and it should be given on an empty stomach, so as to enable it, if possible, to act on the sugar in the blood rather than on the sugar in the food.

Pepsine is another albuminous substance in a state of change. Its action in the stomach is to help the solution of the albuminous food, but when it passes into the blood it might be the animal diatase that carries on the change in the sugar. With this idea it has been given in diabetes, but with no satisfactory result; although many patients have said they were better whilst taking this remedy, yet I have never found the sugar diminish under its use. It usually helps the action of the bowels.

Lately oxygen gas has been tried by Dr. Richardson in diabetes. It would be splendidly simple if this were the specific for diabetes. This view implies that a deficiency of oxygen is the cause of diabetes, but the chemistry of the disease does not admit of this explanation. There must be a much more complex chemical error than a want of oxygen, and it is far more probable that no deficiency of oxygen exists, but that it does not act because the proper animal diastase is not present.

Vegetable and animal oils and fats constitute important remedies in diabetes. Of all these, cod-liver oil and cream are most frequently used. The following case may be taken as an instance of the amount of cod-liver oil that can be given:

A man, aged twenty-four years, was admitted into St. George's Hospital, having lost twe stone in weight during eight months. He passed seven quarts of urine daily. He remained under treatment for a month, during which time he was on animal diet and cod-liver oil. He began with half an ounce daily, and this was gradually increased up to eight ounces. The quantity of urine fell to two pints and a-half, specific gravity 1030, and he increased in weight from eight st. 8 lbs. to 9 st. 1 lb.

Cream may be given in any quantity until the tongue begins to be coated, then it soon disagrees, and the stomach refuses to take it, or rejects it when taken.

Fats, combined with alkalies, as soaps, are more ready to undergo oxidation than when the glycerine is unseparated. Pure glycerine is, however, often very useful as a substitute for sugar in tea and in other liquids.

To lessen the thirst and the craving for food opium is very useful. The alkaloids of opium biffusing out of the blood in contact with the nerves of the blood-vessels cause contraction ot the capillaries; this affects secretions, so that the quantity of urine, saliva, bile, and intestinal secretions is greatly diminished. The drain of urine and the desire for food are thus checked, but the increased constipation and dryness of the mouth almost, and in some instances quite, counterbalance the gain obtained by checking the flow ot water. By the use of very small quantities of opium, as five or ten grains of Dover's powder, or five or ten drops of laudanum once or twice daily, the thirst and excessive flow of urine may be stopped, and the constipation may not be excessively increased.

The second great object in the treatment of diabetes is to remove the constipation.

The excessive determination of water to the kidneys causes increased dryness elsewhere, hence the mucous membrane and the skin are harsh and dry; probably also the production of acid being greatly diminished by arrest of change in the sugar, the healthy secretion by the intestines and skin cannot take place.

Notwithstanding the amount of food eaten, the action of the bowels usually is very difficult. All saline aperients increase the thirst and pass off by the urine. Magnesia from the absence of acidity is usually inactive. Castor oil is by far the best aperient, when it does not nauseate, then capsules containing castor oil with minute quantities of croton oil are most efficacious. Compound extract of colocynth with jalapine, scammony, or gamboge, or podophilline will act when oil cannot be taken. Mercury when soluble combines with the albuminous matters with which it comes in contact and sets up increased chemical action. The nutrition of the parts to which it is directly applied, or carried by absorption and diffusion, is so altered that increased action, inflammation, and ulceration are produced. This altered nutrition has no influence on the oxidation of the sugar or fat, and hence diabates is not benefited by mercury. Calomel may be used as an aperient, but it has not any advantage over other chemical or mechanical irritants to the mucous membrane of the bowels, and promoting a more rapid change in the albuminous structures of the textures causes a feebler nutrition to take place.

In extreme cases the constipation of the bowels becomes the most serious symptom. The chemical disease leads to a mechanical difficulty amounting almost to an obstruction of the bowels. Strong chemical irritants are required to excite the muscular action, sometimes even "croton oil" is necessary. When the bowels do act the prostration of the strength is sometimes alarming: so little power seems to be set free in the body that any extra expenditure seems to deprive the heart of the force necessary to carry out the circulation, in the same way as a fatiguing journey to London for advice in extreme mental anxiety will bring a prostration of strength from which with difficulty recovery takes place.—*Med. Times and Gazette*, from *Braithwaith's Retrospect.*

EDITORIAL AND MISCELLANEOUS.

THE RUSH MEDICAL COLLEGE DISPENSARY.

This charity—established for the relief of those w ose lot embraces the multiplied misfortunes which follow in the train of indigence and disease—was, of kindred institutions, among the earliest founded in the city, and has been the means of lightening the burdens which have bowed down large numbers of poor, but many of them worthy people. Nor have its benefits been confined exclusively to these unfortunate classes, for indirectly they have reached the more highly favored and wealthy. The large number of prisoners of war confined at Camp Douglas, the troops necessarily stationed here for guard duty, and passing through in their transit to and from the front, made the small-pox for a time epidemic in the city, the municipal government in the meantime making no adequate provision to prevent the spread of the disease. Especially during this period the poor flocked to the Dispensary for vaccination, and undoubtedly many in this way escaped the loathsome and fatal disease, and thus the wealthy were protected by the prevention of the development of new centres of infection. The Dispensary is open every Monday, Wednesday and Saturday, in the College building. Dr. C. H. Duk has very kindly taken the principal charge of it during the past year, and has been untiring in his devotion to the interests of those who have presented themselves for treatment, as well as to the instruction of students in attendance. It is visited by several thousand patients annually, which brings together a greater variety of rare and interesting cases than any physician is likely to see in private practice.

During the summer months its clinics are attended by stu-

dents who are pursuing their studies in the city, while in the lecture season the most interesting cases are brought before the class. Prof. Brainard prescribes for and operates on the surgical cases, and among the operations thus witnessed by the class last winter were several of lithotomy, amputations, removal of tumors, operations for hare-lip, varicocele, reduction of dislocations, dressing of fractures, extirpation of superior and inferior maxillary bones, &c., &c.

DEMONSTRATOR OF RUSH MEDICAL COLLEGE.

Dr. Lynn has resigned his place as Demonstrator in this institution, carrying with him the esteem and kind wishes of the Faculty, with whom he has been associated in a very responsible position during the last three years. The place has been filled by the appointment of Dr. Edwin Powell, well known to the Alumni of the school from having occupied the same station a number of years with marked ability. On the breaking out of the war, he gave up his position for service in the army, where he made a record as an operator, and as chief Surgeon of one of our most important and best conducted hospitals, of which his Alma Mater may well be proud. Dr. Powell's numerous friends, both in civil and military life, will certainly congratulate the school that the place made vacant has been so worthily filled.

MARRIED—At Bedford, Lawrence Co., Ind., July 30th, by the Rev. Wm. F. Harned, Jos. H. WILSON, M. D., and JENNIE A. HARRIS, both of Marion, Linn Co., Iowa.

BOOK NOTICES AND REVIEWS.

A Treatise on Military Surgery and Hygiene. By Frank Hastings Hamilton, M. D., late Lieutenant-Colonel, Medical Inspector U. S. A.; Professor of Military Surgery and Hygiene, and of Fractures and Dislocations, in Bellevue Medical College, Surgeon to Bellevue Hospital, Author of a Treatise on "Fractures and Dislocations," and of a "Practical Treatise on Military Surgery." Illustrated with 127 Engravings. New York: Bailliere Brothers, 520 Broadway. 1865.

A suitable notice of this work has been too long delayed, and we now introduce it to the readers of the JOURNAL, without attempting a complete analysis, feeling assured that all who are in any way interested in this important branch of Surgery, will early purchase and peruse the work for themselves.

It is a new and original work by one of the leading Surgeons of the country, and it is enriched by the experience of four years in the camp and field of actual war. The opportunity thus offered to observe the progress and improvements in the art of Military Surgery has not been limited nor unimproved by the author, which give to the teachings of the work a value and authority which no merely theoretical dissertation could possibly impart.

The magnitude of the conflict through which we have just passed, is conceded to have been unequaled in any former time, and nothing was more likely than that such a contest would develop the inventive genius of the nation to the utmost in improving and perfecting the weapons of the belligerents, and accordingly we find that the art of war has reached a point of perfection unapproached hitherto. Great as have been the demonstrations of genius on the part of the combatants, however, improvement has by no means been limited to them, for the effectiveness of the army, in its most brilliant

campaigns, is undeniably in a great measure due to the skill and judgment of the Surgical corps in enforcing a more general observance of the laws of hygiene, and in that conservative Surgery which seeks to preserve the *limbs* as well as the lives of our soldiers.

We subjoin the table of contents, which, with the known ability of the author, will lead to a just appreciation of the value of the work:—Introduction—Examination of Recruits—General Hygiene of Troops—Bivouac, Accommodation of Troops in Tents, Barracks, Billets, Huts, etc.—Hospitals—Preparations for the Field—Hygienic Management of Troops upon the March—Conveyance of Sick and Wounded Soldiers—Gunshot Wounds—Gunshot Injuries of the Head—Gunshot Injuries of the Face and Neck—Gunshot Wounds of the Thorax—Punctured and Incised Wounds of the Thorax—Gunshot Wounds of the Abdomen—Punctured and Incised Wounds of the Abdomen—Gunshot Wounds of the Male Organs of Generation—Gunshot Fractures—Amputations—Exsections—Arrow Wounds—Traumatic Gangrene—Hospital Gangrene—Dry Gangrene—Tetanus—Scorbutus—On the Employment of Anæsthetics in Major Amputations and in other Severe Surgical Operations, after Gunshot Injuries—Appendix.

A System of Surgery; Pathological, Diagnostic, Therapeutic, and Operative. By Samuel D. Gross, M. D. Illustrated by over thirteen hundred Engravings. Third edition, much enlarged and revised. In two volumes. Published by Blanchard and Lea, Philadelphia.

The first two editions of Prof. Gross's System of Surgery are so familiar to the profession, and so highly prized, that it would be idle for us to speak in praise of this work. It is bound in calf, and the two volumes contain above two thousand pages. We cannot give an idea of the changes introduced into the last edition more briefly than to quote from the author's preface: "Upon the edition now issued upwards of two years and a half of arduous labor have been expended.

Every chapter has been thoroughly revised; the text has been augmented by an amount of matter nearly equal to two hundred pages; and a considerable number of wood-cuts, nearly all prepared for the purpose, have been introduced. Many portions have been entirely re-written, and every effort has been made to condense the language; while an enlargement in the form of the work has prevented an increase in the number of pages. The general arrangement is the same as in the previous imprints; and the additions, for the most part, widely scattered through the text, are essentially of a practical character."

The Essentials of Materia Medica and Therapeutics. By Alfred Baring Garrod, M. D., F.R.S., Fellow of the Royal College of Physicians, Professor of Materia Medica and Therapeutics at King's College, London; Physician to King's College Hospital, and Examiner in Materia Medica in the University of London. Published by William Wood & Co., 61 Walker street, N. Y. 1865.

This volume of 400 pages treats only of Materia Medica, it being the purpose and hope of the author "in a few months, to bring before the profession a separate volume devoted exclusively to the value of medicines in the treatment of disease, and embracing the whole subject of Therapeutics." The work is prepared with much ability, the natural history of medicines, their chemical relations, most common adulterations and doses, are given methodically, clearly and concisely, while even their best established therapeutic uses are not omitted, though condensed in a brief space. It is a very valuable addition to our medical literature, and we shall look with interest for the publication of its "companion work" on Therapeutics. Each book is to be complete in itself. The price of the present volume is $4.

We take pleasure in calling the attention of our readers to the "Price List" of S. C. Griggs & Co., contained in this number. This enterprising house promptly add to their large stock all recent medical publications.

GLAUCOMA: ITS SYMPTOMS, DIAGNOSIS AND TREATMENT, by Peter Dirck Keyser, M. D.; *Philadelphia, Lindsay & Blakiston*, 1864. *For Sale at Griggs & Co., Lake st., Chicago.*

Our readers who have not studied the subject of Glaucoma, as discussed in the original papers of Graefe, and other eminent observers, will find much profit in the careful perusal of this monograph. We do not recommand the work on the ground that Glaucoma is a common disease, and the subject therefore of great practical importance to the general physician. At the West the disease is undoubtedly very rare, on account perhaps of the small proportion in our population of aged persons, who are specially liable to it.

The use of the ophthalmoscope and Graefe's and Hancock's brilliant discoveries of iridectomy and section of the ciliary muscle, as curative operations for the disease, have stimulated investigation and extended our knowledge of this subject.

As an exposition of many well established facts regarding certain diseases of the intraocular tissues, we would commend the monograph of Dr. Keyser. It is stated in the preface that the work is founded on the facts observed in the clinics of Graefe at Berlin. We believe the *Boston Medical and Surgical Journal* was the first to call attention of the profession to the fact that the pamphlet is a literal reprint of the lectures of J. S. Wells, on Glaucoma, published last year in London.

The work is yet worthy of perusal, although we think very much more could be said in favor of Hancock's operation of Paracentesis oculi with division of the ciliary muscle, than appears in the work before us.

The typography is worthy of notice. The peculiar tint of the paper will undoubtedly be found agreeable to the eye of the reader. Probably all books, if made of yellow-tinted paper would be read with less fatigue by the majority of persons than as now printed upon perfectly white paper.

H...s

BELLEVUE

MEDICAL HOSPITAL COLLEGE

CITY OF NEW YORK.

SESSION OF 1865-6.

THE Trustees and Faculty announce, with much gratification, the evidence offered by the past sessions of the importance of the new movement in behalf of Medical education, inaugurated by this College.

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The *Preliminary Term* will commence on *Wednesday, September* 13, 1865, and continue four weeks. Instruction during this term will consist of didactic lectures on special subjects, and daily clinical lectures. The lectures during this term are given exclusively by Members of the Faculty. The *Regular Term* will commence on *Wednesday, October* 11, 1865, and end early in March. The plan of instruction in this Institution is to combine, to the fullest extent, clinical and didactic teaching. All the lectures are given within the hospital grounds. Four didactic lectures are given on every week-day, except Saturday,

and from two to three hours daily are allotted to clinical teaching. The Annual Circular will contain further details respecting the plan of instruction, together with the vast opportunities for the study of disease, witnessing surgical and obstetrical operations, the prosecution of anatomy, etc., offered by the Bellevue Hospital, the Blackwell's Island Hospital, and other Public Institutions of the **great Metropolis.**

Tickets to all the lectures during the Preliminary and Regular Term, $105.
Tickets for any of the several departments may be taken out separately.
Matriculation fee, $5.
Demonstrator's ticket, $10.
There are no Dissecting Room fees, nor any charge for subjects.
Hospital tickets are gratuitous, after Matriculation.
Graduation fee, $30.

Students who have attended two full courses in other accredited schools, receive all the tickets for $50, exclusive of the Matriculation fee. Students who have attended two full courses in this College, or after one full course in this College, having previously attended a full course in some other accredited school, will be required to matriculate only. Graduates of other accredited schools, (Eclectic and Homœopathic schools are not accredited,) after three years, are required to matriculate only; prior to three years they receive a general ticket for $50.

Payment of fees invariably required at the commencement of the Session. There are no exceptions to this rule, and students should come prepared to take out their tickets immediately.

Students, on arriving in the city, are requested to report at once at Bellevue Hospital, situated on the East River, between 26th and 28th streets, and inquire for the Janitor, Mr. Silas Pearsall, who will take pains to aid them in securing comfortable accommodations, without delay.

Entrance to the Hospital is on 26th street.

For the Annual Circular, giving further information, address the Secretary of the Faculty, Professor AUSTIN FLINT, Jr., Bellevue Hospital Medical College, or 257 Fourth Avenue, New York. Aug.–Sept.–Oct.

WANTED.

A YOUNG SURGEON, Just returned from the Army, wishes to purchase the

Practice of a Retiring Physician,

or an interest in the same. Would also purchase Horse, Library, stock of Medicines, etc., if desirable.

LOCATION:

In or near a Flourishing Village,

ANY WHERE IN THE UNITED STATES.

Please address for one month, stating terms, location, and full information,

Galen,
New York P. O.

Aug.–Sept.

ANNOUNCEMENT

OF THE

CLEVELAND CHARITY HOSPITAL

MEDICAL COLLEGE.

JAMES DASCOMB, M. D., Professor of Chemistry and Toxicology.
A. P. DUTCHER, M. D., Professor of Principles and Practice of Medicine.
L. FIRESTONE, M. D., Prof. of Obstetrics and Diseases of Women and Children.
J. H. SALISBURY, M. D., Prof. of Physiology, Histology, Pathological Anatomy.
R. N. BARR, M. D., Professor of Anatomy.
GUSTAV C. E. WEBER, M. D., Professor of Civil and Military Surgery.
M. S CASTLE, Esq., Professor of Legal Medicine.
W. J. SCOTT, M. D, Professor of Materia Medica, Botany, and Pharmacy.
A METZ, M. D., Professor of Ophthalmology.
J. C. SCHENCK, M. D., Demonstrator of Anatomy.
GUSTAV C. E. WEBER, M. D., Dean.
J. H. SALISBURY, M. D., Secretary.

The Term for 1865–6 will commence on *Wednesday, October* 25, and will continue Seventeen weeks.

The plan of instruction combines, to the fullest extent, Clinical and Didactic teaching.

The Clinical advantages offered by the St. Vincent and U. S. Marine Hospitals are equal to those of any other institution in the country.

Fees for the tickets of all the Professors, $60.

Matriculation fee, $5.

Graduation fee, $20.

Demonstrator's ticket, $5.

Hospital ticket, $5.

Good board can be obtained, on application to the Dean, for from $4 to $6 per week.

The College Building is situated in Hoffman's Block, on the corner of the Public Square and Superior street, and contains commodious Lecture Rooms, with all the modern improvements.

Students upon arrival will call at the office of the Dean, or at the Faculty Room in the College Building.

GUSTAV C. E. WEBER, M. D., DEAN.

Sept.-Oct. **Office, cor. Euclid st. and Public Square.**

Miami Medical College
OF CINCINNATI.

SIXTH SESSION—WINTER OF 1865-66.

THE REGULAR TERM

Will commence on the First of November, 1865, with a *Preliminary Course* throughout the month of October; the entire course ending early in March, 1866.

Clinical Lectures will be delivered throughout the winter at the Commercial Hospital.

FACULTY.

GEORGE MENDENHALL, M. D.,
Professor of Obstetrics.

B. F. RICHARDSON, M. D.,
Prof. of Diseases of Women and Children.

JOHN A. MURPHY, M. D.,
Prof. of Theory and Practice of Medicine.

HENRY E. FOOTE, M. D.,
Prof. of Anatomy.

WILLIAM H. MUSSEY, M. D.,
Prof. of Operative Surgery and Surgical Pathology.

JESSE P. JUDKINS, M. D.,
Prof. of Special Pathology.

WILLIAM CLENDENIN, M. D.,
Prof. of Military Surgery, Surgical Anatomy, and Principles of Surgery.

E. WILLIAMS, M. D.,
Prof. of Ophthalmology and Aural Surgery.

CHANDLER B. CHAPMAN, M. D.,
Prof. of Chemistry, Toxicology, and Medical Jurisprudence.

EDWARD B. STEVENS, M. D.,
Prof. of Materia Medica and Therapeutics.

WILLIAM H. TAYLOR, M. D.,
Prof. of Physiology, Pathology and Morbid Anatomy.

WILLIAM T. BROWN, M. D.,
Demonstrator of Anatomy.

CHARLES P. WILSON, M. D.,
Prosector to Surgery.

S. P. BONNER, M. D.,
Prosector to Anatomy.

FEES:—For tickets to the entire course, $80. For either ticket separately, $10. Demonstrator's ticket, $5. Matriculation fee, $5. Graduation fee, $25, Commercial Hospital Clinics, $5.

For further information address

GEO. MENDENHALL, M. D., Dean,
197 West 4th Street.

Or, **E. B. STEVENS, M. D., Sec'y,** 319 Elm Street.

Aug.-Sept.-Oct.